

CLAIM SET AS AMENDED

1. (Currently Amended) A keyboard comprising:

a plurality of key switches arranged in a matrix and each including a contact;

a first circuit board having a first plurality of circuit patterns printed thereon to connect one terminals of the contacts of said plurality of key switches to each other in a first direction of the matrix, and a second plurality of circuit patterns printed thereon to connect other terminals of the contacts to each other in a second direction of the matrix, said first plurality of circuit patterns and said second plurality of circuit patterns intersecting each other;

a second circuit board, separate from said first circuit board, carrying an encoder circuit thereon for generating code signals representative of statuses of said plurality of key switches;

a first elongate, flexible flat cable comprising a corresponding plurality of first conductors each being connected to one of said first plurality of circuit patterns, and a flat, flexible insulator covering the plurality of first conductors; and

a second elongate, flexible flat cable comprising a corresponding plurality of second conductors each being connected to one of said second plurality of circuit patterns, and a flat,

flexible insulator covering the second plurality of conductors;

said second circuit board comprising a first connector connecting said first flat cable to said encoder circuit and a second connector connecting said second flat cable to said encoder circuit.

2. (Currently Amended) ~~The keyboard in accordance with claim 1, further comprising:~~ A keyboard comprising:

a plurality of key switches arranged in a matrix and each including a contact;

a first circuit board having a first plurality of circuit patterns printed thereon to connect one terminals of the contacts of said plurality of key switches to each other in a first direction of the matrix, and a second plurality of circuit patterns printed thereon to connect other terminals of the contacts to each other in a second direction of the matrix, said first plurality of circuit patterns and said second plurality of circuit patterns intersecting each other;

a second circuit board carrying an encoder circuit thereon for generating code signals representative of statuses of said plurality of key switches;

a first flat cable comprising a corresponding plurality of first conductors each being connected to one of said first plurality of circuit patterns, and a flat, flexible insulator

covering the plurality of first conductors;

a second flat cable comprising a corresponding plurality of second conductors each being connected to one of said second plurality of circuit patterns, and a flat, flexible insulator covering the second plurality of conductors;

said second circuit board comprising a first connector connecting said first flat cable to said encoder circuit and a second connector connecting said second flat cable to said encoder circuit;

a generally rectangular, flat plate supporting said plurality of key switches;

four elongate frame members each having a slot formed in identical configuration with each other over an entire length of particular one of four sides of said flat plate and each mating with the one side; and

four connecting members each connecting two of said four elongate frame members to form a generally rectangular, planer configuration;

said flat plate being supported by said frame members and said connecting members.

3. (original) The keyboard in accordance with claim 2, wherein said second circuit board is supported by said first circuit board.

4. (Currently Amended) The keyboard in accordance with claim [[1]] 2, wherein said encoder circuit comprises a memory for storing an encoder program sequence complying with said plurality of key switches.

5. (Currently Amended) A method of producing a keyboard, comprising the steps of:

preparing a first circuit board having a first plurality of circuit patterns printed thereon to connect one terminals of contacts of a first plurality of key switches to be arranged in a matrix to each other in a first direction of the matrix, and a second plurality of circuit patterns printed thereon to connect other terminals of the contacts to each other in a second direction of the matrix, the first plurality of circuit patterns and the second plurality of circuit patterns intersecting each other;

preparing a desired, second plurality of key switches smaller in number than the first plurality of key switches;

slicing the first circuit board to separate a portion of the first circuit board corresponding to the second plurality of key switches;

preparing a second circuit board, separate from the first circuit board, carrying thereon an encoder for generating code signals representative of statuses of the second plurality of key switches;

connecting each of the first plurality of circuit patterns on the separated portion to one of a plurality of conductors which are included in a first elongate, flexible flat cable and covered with a flat, flexible insulator;

connecting each of the second plurality of circuit patterns on the separated portion to one of a plurality of conductors which are included in a second elongate, flexible flat cable and covered with a flat, flexible insulator;

connecting the first flat cable and the second flat cable to a first connector and a second connector, respectively, which are connected to the encoder circuit; and

connecting contacts of the second plurality of key switches to the first circuit patterns and the second circuit patterns included in the separated portion.

6. (Currently Amended) ~~The method in accordance with claim 5, further comprising the steps of:~~ A method of producing a keyboard, comprising the steps of:

preparing a first circuit board having a first plurality of circuit patterns printed thereon to connect one terminals of contacts of a first plurality of key switches to be arranged in a matrix to each other in a first direction of the matrix, and a second plurality of circuit patterns printed thereon to connect other terminals of the contacts to each other in a second direction

of the matrix, the first plurality of circuit patterns and the second plurality of circuit patterns intersecting each other;

preparing a desired, second plurality of key switches smaller in number than the first plurality of key switches;

slicing the first circuit board to separate a portion of the first circuit board corresponding to the second plurality of key switches;

preparing a second circuit board carrying thereon an encoder for generating code signals representative of statuses of the second plurality of key switches;

connecting each of the first plurality of circuit patterns on the separated portion to one of a plurality of conductors which are included in a first flat cable and covered with a flat, flexible insulator;

connecting each of the second plurality of circuit patterns on the separated portion to one of a plurality of conductors which are included in a second flat cable and covered with a flat, flexible insulator;

connecting the first flat cable and the second flat cable to a first connector and a second connector, respectively, which are connected to the encoder circuit;

connecting contacts of the second plurality of key switches to the first circuit patterns and the second circuit patterns included in the separated portion;

mounting said second plurality of key switches on a generally rectangular, flat plate;

preparing four elongate frame members formed with slots identical in configuration with each other and each being expected to mate with a particular one of four sides of said flat plate over an entire length of said side;

causing the four sides of said flat plate and said four frame members to respectively mate with each other; and

connecting said four frame members with four connecting members to thereby form a frame in a generally rectangular configuration, as seen in a plane.

7. (Currently Amended) The method in accordance with claim [[5]] 6, further comprising the step of mounting said second circuit board to said first circuit board.

8. (Currently Amended) The method in accordance with claim [[5]] 6, wherein said encoder includes a rewritable memory, said method further comprising the step of writing a coding program matching with said plurality of key switches in said memory.

9. (New) The keyboard in accordance with claim 1, further comprising:

a generally rectangular, flat plate supporting said plurality

of key switches;

four elongate frame members each having a slot formed in identical configuration with each other over an entire length of particular one of four sides of said flat plate and each mating with the one side; and

four connecting members each connecting two of said four elongate frame members to form a generally rectangular, planar configuration;

said flat plate being supported by said frame members and said connecting members.

10. (New) The keyboard in accordance with claim 9, wherein said second circuit board is supported by said first circuit board.

11. (New) The keyboard in accordance with claim 1, wherein said encoder circuit comprises a memory for storing an encoder program sequence complying with said plurality of key switches.

12. (New) The method in accordance with claim 5, further comprising:

mounting said second plurality of key switches on a generally rectangular, flat plate;

preparing four elongate frame members formed with slots identical in configuration with each other and each being expected



to mate with a particular one of four sides of said flat plate over an entire length of said side;

causing the four sides of said flat plate and said four frame members to respectively mate with each other; and

connecting said four frame members with four connecting members to thereby form a frame in a generally rectangular configuration, as seen in a plane.

13. (New) The method in accordance with claim 5, further comprising mounting said second circuit board to said first circuit board.

14. (New) The method in accordance with claim 5, said method further comprising writing a coding program matching with said plurality of key switches wherein said encoder includes a rewritable memory.